Filename: PMP9475_BOM_RevA.xls

Variant: 001

C34

Generated: 7/28/2014 5:02:49 PM

PMP9475 Ultrascale Virtex Power Solution

CAP, CERM, 82pF, 50V, +/-5%, C0G/NP0, 0603

		-	<u> </u>	
Designator	Description	Manufacturer	PartNumber	Quantity
!PCB1	Printed Circuit Board	Any	PMP9475	1
	CAP, CERM, 0.01uF, 50V, +/-10%, X7R, 0402	MuRata	GRM155R71H103KA88D	12
C4, C5, C6,				
C7, C8,				
C145,				
C183,				
C223, C242				
C9	CAP, CERM, 0.01uF, 16V, +/-10%, X7R, 0402	MuRata	GRM155R71C103KA01D	1
C10, C11,	CAP, CERM, 0.1uF, 25V, +/-10%, X7R, 0603	MuRata	GRM188R71E104KA01D	21
C13, C14,				
C16, C46,				
C47, C71,				
C72, C87,				
C96, C102,				
C111,				
C117,				
C126,				
C153,				
C162,				
C265,				
C267,				
C270, C272				
C12 C15	CAP, CERM, 4.7uF, 6.3V, +/-10%, X5R, 0603	MuRata	GRM188R60J475KE19D	2
	CAP, CERM, 39pF, 100V, +/-5%, C0G/NP0, 0603	MuRata	GRM1885C2A390JA01D	2
	CAP, CERM, 110pF, 50V, +/-5%, C0G/NP0, 0603	MuRata	GRM1885C1H111JA01D	2
	CAP, AL, 100uF, 25V, +/-20%, 0.3 ohm, SMD	Panasonic	EEE-FC1E101P	2
	CAP, CERM, 22uF, 25V, +/-10%, X5R, 1210	MuRata	GRM32ER61E226KE15L	13
C25, C26,	07 tr , 621 tr, 22 tr, 47 1675, 761t, 1216	mar tata		
C27, C28,				
C29, C30,				
C31, C32,				
C128,				
C129, C130				
, , , , , ,				
C33, C147.	CAP, CERM, 1000pF, 25V, +/-10%, X7R, 0603	MuRata	GRM188R71E102KA01D	5
C185,				
C225, C244				

MuRata

GRM1885C1H820JA01D

Dealers	Danasti Cari	Banny for the	Double	0
Designator CSF CS4	Description CAP, CERM, 0.1uF, 25V, +/-10%, X5R, 0402	Manufacturer MuRata	PartNumber GRM155R61E104KA87D	Quantity 14
C35, C61, C88, C103,	CAP, CERIVI, U. TUP, 25V, +/-10%, ASR, U4U2	Murala	GRIVI 155R6 1E 104RA67D	14
C118,				
C110,				
C154,				
C172,				
C172, C189,				
C109, C196,				
C209,				
C209, C232,				
C247, C250				
0247, 0250				
C36	CAP, CERM, 820pF, 50V, +/-5%, C0G/NP0, 0603	MuRata	GRM1885C1H821JA01D	1
C37, C38,	CAP, CERM, 100uF, 6.3V, +/-20%, X5R, 1210	MuRata	GRM32ER60J107ME20L	73
C39, C40,	, ,			
C41, C42,				
C49, C50,				
C51, C52,				
C53, C54,				
C62, C63,				
C64, C65,				
C66, C67,				
C74, C75,				
C76, C77,				
C78, C79,				
C89, C90,				
C91, C92,				
C94, C95,				
C104,				
C104,				
C105, C106,				
C100, C107,				
C107,				
C110,				
C119,				
C120,				
C121,				
C122,				
C124,				
C125,				
C137,				
C138,				
C139,				
C140,				
C43, C45,	CAP, CERM, 1000pF, 50V, +/-10%, X7R, 0603	MuRata	GRM188R71H102KA01D	6
C55, C68,				
C69, C73	OAR OFRINA E OF A 1999 NET TO THE	 	0014460004545	
C44, C58,	CAP, CERM, 1uF, 25V, +/-10%, X5R, 0603	MuRata	GRM188R61E105KA12D	16
C59, C60,				
C70, C131,				
C136,				
C170,				
C187,				
C207,				
C230,				
C245,				
C266,				
C268,				
C269, C271				

Designator	Description (148)	Manufacturer	PartNumber	Quantity
	CAP, CERM, 3300pF, 50V, +/-10%, X7R, 0603	MuRata	GRM188R71H332KA01D	2
	CAP, TA, 560uF, 2V, +/-20%, 0.003 ohm, SMD	Panasonic	EEF-GX0D561L	8
C80, C81,				
C135,				
C211,				
C212, C234				
C83 C97	CAP, CERM, 2.2uF, 25V, +/-10%, X5R, 0805	MuRata	GRM21BR61E225KA12L	4
C112, C148	C/11 , CE11(11, 2.2d) , 20 V, 17 10 70, 701 V, 0000	ivial tata	OT WILL I BITTO TELEBOOK TIEE	
0112, 0110				
C84	CAP, CERM, 0.033uF, 10V, +/-10%, X7R, 0402	MuRata	GRM155R71A333KA01D	1
C85, C86,	CAP, CERM, 22uF, 25V, +/-10%, X7R, 1210	MuRata	GRM32ER71E226KE15L	24
C99, C100,				
C101,				
C114,				
C115,				
C116,				
C150,				
C151,				
C152,				
C164,				
C165,				
C166,				
C167,				
C168,				
C169,				
C190,				
C191,				
C192,				
C193, C194,				
C203, C246				
C203, C240				
C93, C159	CAP, AL, 220uF, 6.3V, +/-20%, 0.007 ohm, SMD	Panasonic	EEF-UE0J221LR	2
C98, C113	CAP, CERM, 0.015uF, 25V, +/-10%, X7R, 0402	MuRata	GRM155R71E153KA61D	2
C127,	CAP, CERM, 330pF, 50V, +/-5%, C0G/NP0, 0402	MuRata	GRM1555C1H331JA01D	5
C163,				
C202,				
C226, C251				
C132,	CAP, CERM, 4700pF, 25V, +/-10%, X7R, 0402	MuRata	GRM155R71E472KA01D	4
C132,	CAI, CEINN, 4700pi, 23V, 17-1070, X71X, 0402	iviui\ata	GRWI133R7 TE47 ZRAOTD	-
C208, C231				
0200, 0201				
C142,	CAP, CERM, 1uF, 10V, +/-10%, X5R, 0402	MuRata	GRM155R61A105KE15D	12
C146,				
C175,				
C180,				
C184,				
C213,				
C220,				
C224,				
C235,				
C243,				
C260, C262				
C144	CAD CEDM 4.7uE 46\/ ±/400/ VED 0603	MuData	CDM199D61C47EKAA I	1
C144, C182,	CAP, CERM, 4.7uF, 16V, +/-10%, X5R, 0603	MuRata	GRM188R61C475KAAJ	4
C162, C222, C241				
0222, 0241				
		I		1

Designator	Description	Manufacturer	PartNumber	Quantity
C149	CAP, CERM, 0.022uF, 25V, +/-10%, X7R, 0402	MuRata	GRM155R71E223KA61D	1
C174	CAP, TA, 330uF, 2V, +/-20%, 0.003 ohm, SMD	Panasonic	EEF-GX0D331R	1
C186, C201	CAP, CERM, 100pF, 100V, +/-5%, C0G/NP0, 0603	MuRata	GRM1885C2A101JA01D	2
C188	CAP, CERM, 2.2uF, 16V, +/-10%, X5R, 0603	MuRata	GRM188R61C225KE15D	1
C197,	CAP, CERM, 47uF, 6.3V, +/-20%, X5R, 1210	MuRata	GRM32ER60J476ME20L	3
C198, C199				
C200	CAP, AL, 220uF, 4V, +/-20%, 9 ohm, SMD	Panasonic	EEFSX0G221ER	1
C204, C205, C206, C227, C228, C229	CAP, CERM, 10uF, 25V, +/-10%, X7R, 1206	MuRata	GRM31CR71E106KA12L	6
C210, C258	CAP, CERM, 1500pF, 50V, +/-10%, X7R, 0402	MuRata	GRM155R71H152KA01D	2
C233	CAP, CERM, 1000pF, 50V, +/-10%, X7R, 0402	TDK	C1005X7R1H102K	1
C248	CAP, CERM, 33pF, 50V, +/-5%, C0G/NP0, 0402	MuRata	GRM1555C1H330JA01D	1
C249	CAP, CERM, 3300pF, 50V, +/-10%, X7R, 0402	MuRata	GRM155R71H332KA01D	1
C263	CAP, CERM, 1000pF, 16V, +/-10%, X5R, 0402	MuRata	GRM155R61C102KA01D	1
C264	CAP, CERM, 470pF, 50V, +/-10%, X7R, 0603	MuRata	GRM188R71H471KA01D	1
D1	Diode, Zener, 5.1V, 300mW, SOD-523	Diodes Inc.	BZT52C5V1T-7	1
FID1, FID2, FID3	Fiducial mark. There is nothing to buy or mount.	N/A	N/A	3
H1, H2, H3, H4	Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	B&F Fastener Supply	NY PMS 440 0025 PH	4
H5, H6, H7, H8	Standoff, Hex, 0.5"L #4-40 Nylon	Keystone	1902C	4
J1	Header, 100mil, 5x2, Tin plated, TH	Sullins Connector Solutions	PEC05DAAN	1
J2, J3	Standard Banana Jack, Uninsulated	Keystone	6095	2
J4, J5	Lug, Copper, 35A,	Panduit	CX35-36-CY	2
J6, J7, J8, J9, J10, J11, J12, J13, J14, J15	TERMINAL BLOCK 5.08MM VERT 2POS, TH	On-Shore Technology	ED120/2DS	10
L1, L2	Inductor, High Fq, High Current, ±10%	Coiltronic	CTX01-18738-R	2
L3	Inductor, Shielded Drum Core, WE-Superflux200, 1uH, 15A, 0.0046 ohm, SMD	Wurth Elektronik eiSos	744311100	1
L4, L5	Inductor, Shielded Drum Core, Ferrite, 1.5uH, 16.5A, 0.0044 ohm, SMD	Wurth Elektronik eiSos	7443340150	2
L6	Inductor, Shielded Drum Core, WE-Perm, 470nH, 26A, 0.00095 ohm, SMD	Wurth Elektronik eiSos	744355047	1
L7	Inductor, Shielded Drum Core, Superflux, 1.2uH, 20A, 0.00178 ohm, SMD	Wurth Elektronik eiSos	744325120	1
L8	Inductor, Shielded Drum Core, Superflux, 720nH, 22A, 0.00135 ohm, SMD	Wurth Elektronik eiSos	744325072	1
L9	Inductor, Shielded Drum Core, Powdered Iron, 2.2uH, 16A, 0.003 ohm, SMD	Wurth Elektronik eiSos	7443310220	1
L10	Inductor, Shielded Drum Core, Ferrite, 250nH, 40A, 0.00032 ohm, SMD	Wurth Elektronik eiSos	744301025	1
L11	Inductor, Shielded Drum Core, Powdered Iron, 820nH, 13A, 0.0067 ohm, SMD	Vishay-Dale	IHLP2525CZERR82M01	1
L12	Inductor, Shielded Drum Core, Powdered Iron, 2.2uH, 5.8A, 0.0292 ohm, SMD	Vishay-Dale	IHLP2020CZER2R2M01	1
LBL1	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	Brady	THT-14-423-10	1

Designator	Description	Manufacturer	PartNumber	Quantity
Q1, Q2	Synchronous Buck NexFET Power Stage, NexFET Q5M	Texas Instruments	CSD95378B	2
Q3, Q4, Q5, Q6	Transistor, NPN, 40V, 0.2A, SOT-23	Fairchild Semiconductor	MMBT3904	4
	RES, 1.00k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06031K00FKEA	5
R3	RES, 41.2k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060341K2FKEA	1
R5, R65, R74	RES, 90.9k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060390K9FKEA	3
R7, R8, R9, R10, R11, R12, R17, R20, R22, R23, R41, R44, R117	RES, 10.0k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060310K0FKEA	13
·	RES, 2.21k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06032K21FKEA	3
R16	RES, 80.6k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060380K6FKEA	1
R18, R19	RES, 29.4k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060329K4FKEA	2
R21	RES, 84.5k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060384K5FKEA	1
	RES, 10.0k ohm, 0.1%, 0.1W, 0603	Susumu Co Ltd	RG1608P-103-B-T5	2
R25, R43, R55, R64, R73, R83, R93, R103, R121, R127, R138, R155, R165, R166, R167, R168	RES, 0 ohm, 5%, 0.063W, 0402	Vishay Dala	CRCW04020000Z0ED	16
R26, R36, R40, R119	RES, 49.9 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060349R9FKEA	4
R30	RES, 16.9k ohm, 0.1%, 0.1W, 0603	Yageo America	RT0603BRD0716K9L	1
R31	RES, 12.1k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060312K1FKEA	1
R32, R33, R42, R47, R48, R116, R164	RES, 0 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW06030000Z0EA	7
R34, R52	RES, 121k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603121KFKEA	2
R37	RES, 40.2k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060340K2FKEA	1
R38, R39, R53, R54	RES, 1.0 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW06031R00JNEA	4
R50	RES, 16.2k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060316K2FKEA	1
R51	RES, 25.5k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060325K5FKEA	1
R56	RES, 243k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603243KFKEA	1
R57	RES, 52.3k ohm, 0.1%, 0.1W, 0603	Yageo America	RT0603BRD0752K3L	1
R58	RES, 47.5k ohm, 0.1%, 0.1W, 0603	Susumu Co Ltd	RG1608P-4752-B-T5	1

Dosignator (SP) RSE, MES, 49 ohm, 1%, 0.063W, 0402 Wishay-Dale CROW040249R9FKED 18 R68, R71, R80, RES, 49 ohm, 1%, 0.063W, 0402 Vishay-Dale CROW040249R9FKED 18 R82, R81, R81, R81, R82, R81, R81, R81, R81, R81, R81, R81, R81	I				
R68, R71, R77, R80, R82, R89, R87, R100, R1726, R133, R137, R144, R153, R163 R80, R80, R89, R81, R8163 R81, R70, R85, R163 R81, R70, R85, 100k ohm, 1%, 2W, 1224 R81, R101 R81, R70, R85, 100k ohm, 5%, 0.1W, 0603 R78, R89, R178, R89, R178 R81, R101 R83, R72, R85, 2.55k ohm, 1%, 0.1W, 0603 R78, R89, R178 R81, R101 R83, R72, R85, 2.55k ohm, 1%, 0.1W, 0603 R78, R89, R85, 100k ohm, 0.1%, 0.1W, 0603 R87, R78, R99, R123 R81, R101 R86, R75 R85, 100k ohm, 0.1%, 0.1W, 0603 R87, R76 R85, 89 8b ohm, 0.1%, 0.1W, 0603 R97, R76 R85, 89 8b ohm, 0.1%, 0.1W, 0603 R98, R85, 80 4k ohm, 1%, 0.063W, 0402 R88 R85, 80 4k ohm, 1%, 0.063W, 0402 R88 R85, 80 4k ohm, 1%, 0.063W, 0402 R88 R81, R141 R88, R141 R88, R141 R89, R81, R85, 80 8k ohm, 0.1%, 0.1W, 0603 R89, R81, R81, R81, R81, R81, R81, R81, R81	Designator	Description	Manufacturer	PartNumber	Quantity
R77, R80, R82, R89, R87, R100, R102, R109, R102, R109, R102, R109, R1126, R133, R134, R153, R163, R85, R89, R85, R108 bhm, 5%, 0,11W, 0603 Vishay-Dale CRCW0603100KJNEA 5 R81, R70, R89, R156, R89, R156, R89, R81, R70, R89, R156, R89, R81, R70, R89, R158, R89, R89, R89, R89, R89, R89, R89, R8		RES, 49.9 ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW040249R9FKED	18
R82, R89, R87, R100, R102, R102, R126, R133, R137, R144, R153, R163 RES, D00, B00, R00, R00, R00, RES, 0.005 ohm, 1%, 2W, 1224 Ohmite LVK25R005FER 5 R80, R89, R78, R98, R156, R81, R70, RES, 100k ohm, 5%, 0.1W, 0603 Vishay-Dale CRCW0603100KJNEA 5 R78, R98, R123 R81, R101 R85, R156, R84, R101 R85, R156, R84, R101 R85, R156, R85, R72, R98, R123 R81, R101 R85, R85, R72, R98, R123 R81, R101 R85, R85, R72, R98, R123 R85, R124, R18, R101 R85, R85, R85, 804k ohm, 0.1%, 0.1W, 0603 Yageo America R106038R00710KL 2 R87, R78, R96, R78 RES, 804k ohm, 0.1%, 0.053W, 0402 Vishay-Dale CRCW040260KFKED 1 R86 RES, 804k ohm, 0.1%, 0.10W, 0603 Susumu Co. Ltd R01609P-3012-B15 R84, R141, R18, R141, R1					
R97, R100, R102, R109, R153, R109, R153, R109, R154, R154, R153, R163, R164, R					
R102, R126, R133, R137, R144, R153, R163 RES, 0.005 chm, 1%, 2W, 1224 Ohmite LVK25R005FER 5 R85, R85, R85, R85, R05, R89, R156 R81, R70, R89, R123 R83, R72, R89, R123 R83, R72, R89, R124 R81, R101 R81, R101, R101 R81, R101 R81	R82, R89,				
R109, R126, R133, R137, R144, R153, R163, R164,	R97, R100,				
R126, R133, R137, R144, R159, R163 R6C, R69, RES, 0.005 ohm, 1%, 2W, 1224 Ohmite LVK25R005FER 5 R76, R98, R76, R98, R156 CRCW0603100KJNEA 5 R77, R99, R156 CRCW0603100KJNEA 5 R77, R99, R123 R83, R72, RES, 100k ohm, 5%, 0.1W, 0603 Vishay-Dale CRCW0603100KJNEA 5 R81, R101 CRCW0603100KJNEA 5 R81, R101 CRCW0603100KJNEA 5 R81, R101 CRCW0603100KJNEA 5 R85, R10, R10, R10, R10, R10, R10, R10, R10	R102,				
R126, R133, R137, R144, R159, R163 R6C, R69, RES, 0.005 ohm, 1%, 2W, 1224 Ohmite LVK25R005FER 5 R76, R98, R76, R98, R156 CRCW0603100KJNEA 5 R77, R99, R156 CRCW0603100KJNEA 5 R77, R99, R123 R83, R72, RES, 100k ohm, 5%, 0.1W, 0603 Vishay-Dale CRCW0603100KJNEA 5 R81, R101 CRCW0603100KJNEA 5 R81, R101 CRCW0603100KJNEA 5 R81, R101 CRCW0603100KJNEA 5 R85, R10, R10, R10, R10, R10, R10, R10, R10	R109,				
R133, R137, R144, R153, R163 R69, R69, R69, R69, R69, R69, R69, R69,					
R137, R144, R152, R183 R63, R69, RES, 0.005 ohm, 1%, 2W, 1224 R78, R88, R150 R78, R89, R170, RES, 100k ohm, 5%, 0.1W, 0603 R78, R99, R173 R83, R72, RES, 2.55k ohm, 1%, 0.1W, 0603 R83, R72, RES, 100k ohm, 0.1%, 0.1W, 0603 R83, R72, RES, 100k ohm, 0.1%, 0.1W, 0603 R85, R76, R68, 89.8k ohm, 0.1%, 0.1W, 0603 R85, R76, R68, 89.8k ohm, 0.1%, 0.1W, 0603 R85, R85, R85, 60.4k ohm, 0.1%, 0.0%, 0.0%, 0.003 R85, R85, R85, 60.4k ohm, 0.1%, 0.0%, 0.0%, 0.003 R85, R85, 80.4k ohm, 0.1%, 0.0%, 0.0%, 0.003 R85, R85, 80.4k ohm, 0.1%, 0.1W, 0603 R86, R85, 80.4k ohm, 0.1%, 0.1W, 0603 R87, R76 R85, 80.4k ohm, 0.1%, 0.1W, 0603 R87, R76 R85, 80.4k ohm, 0.1%, 0.1W, 0603 R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd R86, R86, 80.4k ohm, 0.1%, 0.1W, 0603 R87, R76 R86, R86, 80.4k ohm, 0.1%, 0.1W, 0603 R87, R76 R86, R86, R86, R86, R86, R86, R86, R86					
R153, R163 R60, R69, R65, 0.005 ohm, 1%, 2W, 1224 R678, R99, R156 R61, R70, RES, 100k ohm, 5%, 0.1W, 0603 R79, R99, R156 R61, R70, RES, 100k ohm, 5%, 0.1W, 0603 R79, R99, R156 R79, R99, R156 R83, R72, RES, 2.55k ohm, 1%, 0.1W, 0603 R79, R99, R157 R85, R15, R101 R86, R75 R85, R15, R100k ohm, 0.1%, 0.1W, 0603 R79, R99, R152 R87, R76 R85, R85, 80 ohm, 0.1%, 0.1W, 0603 R87, R85, R85, 80 ohm, 0.1%, 0.1W, 0603 R87, R89 R85, R85, 80 ohm, 0.1%, 0.1W, 0603 R86, R85, 80 ohm, 0.1%, 0.1W, 0603 R87, R89 R87, R88, R141, R85, 30.1k ohm, 0.1%, 0.1W, 0603 R88, R141, R85, 30.1k ohm, 0.1%, 0.1W, 0603 R89, R141, R85, 30.1k ohm, 0.1%, 0.1W, 0603 R89, R100, R85, 80 ohm, 0.1%, 0.1W, 0603 R90, R110, R85, 80 ohm, 0.1%, 0.1W, 0603 R91, R143 R91, R92 R85, R85, R85, R85, R85, R85, R85, R85,	· ·				
R163, R163 RES, 0.005 ohm, 1%, 2W, 1224 Ohmite LVK25R005FER 5 R61, R70, R8S, 100k ohm, 5%, 0.1W, 0603 R78, R99, R158 R61, R70, RES, 100k ohm, 5%, 0.1W, 0603 R78, R99, R123 R63, R72, RES, 2.55k ohm, 1%, 0.1W, 0603 R78, R99, R81, R101 R66, R75 R85, 10.0k ohm, 0.1%, 0.1W, 0603 R79, R98, R87, R76 R87, R76 R85, 89.0k ohm, 0.1%, 0.1W, 0603 R85 R85 R85, R85, 60.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402260k4FkED R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd R6108P-3012-B-T5 R88, R141, RES, 30.3k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040228K3FKED FR110, RES, 89.8k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-3012-B-T5 R88, R141, RES, 30.3k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040228K3FKED FR111, R134, R145 R89, R89, R89, R89, R89, R89, R89, R89,					
R60, R69, R78, R98, R156 RES, 0.005 ohm, 1%, 2W, 1224 Ohmite LVK25R005FER 5 R61, R70, R70, RRS, 100k ohm, 5%, 0.1W, 0603 Vishay-Dale CRCW0603100KJNEA 5 R61, R70, RRS, 172, RRS, 2.55k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06032K55FKEA 4 R81, R101 R86, R75 RES, 10.0k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD0710KL 2 R67, R76 RES, 89, 8k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD0739KBL 2 R85, R76, RES, 60, 4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040280K4FKED 1 R86 RES, 60, 4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040226K4FKED 1 R88, R141, RES, 30, 1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-3012-B-T5 1 R88, R141, RES, 30, 1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-3012-B-T5 3 R91, R92 RES, 27.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04023KK3FKED 5 R91, R92 RES, 40.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW040227K4FKED 2 R94 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW04023FKFEA 1 R96 RES, 60.4k ohm, 0.1%, 0.1W, 0603 <td>•</td> <td></td> <td></td> <td></td> <td></td>	•				
R78, R98, R156 R61, R70, RES, 100k ohm, 5%, 0.1W, 0603 R79, R99, R123 R63, R72, RES, 2.55k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06032K55FKEA 4 R63, R72, RES, 2.55k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06032K55FKEA 4 R67, R76 RES, 89, 8k ohm, 0.1%, 0.1W, 0603 R67, R76 RES, 89, 8k ohm, 0.1%, 0.1W, 0603 R68, R75 RES, 10.0k ohm, 0.1%, 0.1W, 0603 R86 RES, 60.4k ohm, 0.1%, 0.1W, 0603 R86 RES, 60.4k ohm, 0.1%, 0.1W, 0603 R86 RES, 50, 1k ohm, 0.1%, 0.1W, 0603 R87, R76 RES, 89, 8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040280K4FKED R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd R61608P-3012-B-T5 R89, R110, RES, 38, 3k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040238K3FKED CRCW040238K3FKED CRCW040238K3FKED CRCW040227K4FKED CRCW040227K4FKED CRCW040227K4FKED R89, R141, RES, 256k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040227K4FKED CRCW040227K4FKED CRCW040227K4FKED R89, R141, RS9, 26k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040227K4FKED CRCW060325KFKEA R89, R89, 80, 8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW060325KFKEA R89, R89, R89, 80, 8k ohm, 1%, 0.083W, 0402 Vishay-Dale CRCW060325KFKEA R89, R89, 80, 8k ohm, 1%, 0.1W, 0603 R896 R89, R89, 80, 8k ohm, 1%, 0.1W, 0603 Susumu Co Ltd R8168898000000000000000000000000000000000		DES 0.005 ohm 10/ 2W/ 1224	Ohmito	LVK3ED00EEED	-
R156 R81 R70, RES, 100k ohm, 5%, 0.1W, 0603 Vishay-Dale CRCW0603100KJNEA 5 R79, R99, R123 R83, R72, RES, 2.55k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06032K55FKEA 4 R81, R101 R86, R75 RES, 10.0k ohm, 0.1%, 0.1W, 0603 Vageo America R10603BRD0710KL 2 R87, R76 RES, 80 8k ohm, 1%, 0.0W, 0603 Vageo America R10603BRD0710KL 2 R87, R76 RES, 60.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040260K4FKED 1 R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd R01608P-6042-B-T5 1 R98, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd R01608P-6042-B-T5 1 R98, R141, R143, R143 RES, 30.1k ohm, 0.1%, 0.0W, 0603 Susumu Co Ltd R01608P-6042-B-T5 3 R98, R141, R143, R143, R143, R143, R1445 RES, 80.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040227K4FKED 5 R94 RES, 25.5k ohm, 1%, 0.003W, 0402 Vishay-Dale CRCW040227K4FKED 2 R94 RES, 25.5k ohm, 1%, 0.0W, 0603 Vageo America R10603BR07040K2 L 1 R85, 80.4k ohm, 0.1%, 0.1W, 0603 Vageo America R10603BR07040K2 L 1 R85, 80.4k ohm, 0.1%, 0.1W, 0603 Vageo America R10603BR07040K2 L 1 R85, 30.0k ohm, 0.1%, 0.1W, 0603 Vageo America R10603BR07040K2 L 1 R85, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd R10608P-303-B-T5 2 R85, 80.2k ohm, 1%, 0.1W, 0603 Susumu Co Ltd R01608P-303-B-T5 2 R8112 RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd R01608P-303-B-T5 2 R8112 RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd R01608P-303-B-T5 2 R8112 RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd R01608P-303-B-T5 2 R8112 RES, 30.2k ohm, 1%, 0.0W, 0603 Susumu Co Ltd R01608P-303-B-T5 2 R8112 RES, 30.2k ohm, 1%, 0.0W, 0603 Susumu Co Ltd R01608P-303-B-T5 2 R8112 RES, 30.0k ohm, 0.1%, 0.0W, 0603 Susumu Co Ltd R01608P-303-B-T5 2 R8112 RES, 30.0k ohm, 0.1%, 0.0W, 0603 Susumu Co Ltd R01608P-303-B-T5 2 R8112 RES, 30.0k ohm, 1%, 0.0W, 0603 Vishay-Dale CRCW060378CFKEA 1 R8114 RES, 42.2k ohm, 1%, 0.0W, 0603 Vishay-Dale CRCW060378CFKEA 1 R8114 RES, 42.2k ohm, 1%, 0.0W, 0603 Vishay-Dale CRCW060378CFKEA 1 R8114 RES, 42.2k ohm, 1%, 0.0W, 0603 Vishay-Dale CRCW060378CFKEA 1 R8114 RES, 10.0k ohm, 1%, 0.0W, 0603 Vishay-Dale CRCW060378CFKEA 1 R8		RES, 0.005 01111, 176, 244, 1224	Onlinite	LVK25R005FER	5
R61, R70, R79, R99, R123 RES, 100k ohm, 5%, 0.1W, 0603 Vishay-Dale CRCW0603100KJNEA 5 R83, R72, R83, 272, R85, 2.55k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06032K55FKEA 4 R81, R101 R86, R75 R85, 10.0k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD07789K8L 2 R85, R78, R6, R85, 89.8k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD0789K8L 2 R85 R85, 80.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-6042B-T5 1 R86 R85, 80.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-3012-B-T5 1 R86 R85, 80.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-3012-B-T5 3 R87 R86 R85, 80.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-3012-B-T5 3 R111, R111, R114, RES, 30.1k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04023RK3FKED 5 R91, R92 RES, 27.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040227K4FKED 2 R94 RES, 255k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW040238K3FKED 1 R95 RES, 40.4k ohm, 0.1%, 0.1W, 0603 </td <td></td> <td></td> <td></td> <td></td> <td></td>					
R79, R99, R123 R63, R72, RES, 2.55k ohm, 1%, 0.1W, 0603 R66, R75 RES, 10.0k ohm, 0.1%, 0.1W, 0603 Yageo America R70603BRD0710KL R67, R76 RES, 99.8k ohm, 0.1%, 0.1W, 0603 Yageo America R70603BRD0710KL R776 RES, 99.8k ohm, 0.1%, 0.1W, 0603 Yageo America R70603BRD0710KL R776 RES, 99.8k ohm, 0.1%, 0.1W, 0603 Yageo America R70603BRD0710KL R706 RES, 60.4k ohm, 0.1%, 0.1W, 0603 R85 RES, 60.4k ohm, 0.1%, 0.1W, 0603 R88, R141, RES, 60.4k ohm, 0.1%, 0.1W, 0603 R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 R98, R110, RES, 83.3k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040238K3FKED T818, R148, R145 R89, R110, RES, 38.3k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040227K4FKED Z R84 RES, 255k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA R95 RES, 40.2k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA R95 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA R95 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA R96 RES, 60.4k ohm, 0.1%, 0.1W, 0603 R96 RES, 60.4k ohm, 0.1%, 0.1W, 0603 R976 RES, 60.4k ohm, 0.1%, 0.1W, 0603 R108, R132 RES, 60.4k ohm, 0.1%, 0.1W, 0603 R108, R108, R108, R108, R108, R108, R10		DEC. 4001 1	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	000000000000000000000000000000000000000	
R123 R83, R72, RES, 2.55k ohm, 1%, 0.1W, 0603 R85, R75 RES, 10.0k ohm, 0.1%, 0.1W, 0603 R877, R67, R76 RES, 89.8k ohm, 0.1%, 0.1W, 0603 R87, R76 RES, 89.8k ohm, 0.1%, 0.1W, 0603 R85 RES, 60.4k ohm, 1%, 0.063W, 0402 Vishay-Dale R86, R87, R76 RES, 89.8k ohm, 0.1%, 0.1W, 0603 R87, R87, R76 RES, 89.8k ohm, 0.1%, 0.1W, 0603 R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 R94, R10, R10, RES, 88.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04023K45FKED SR81, R10, RES, 88.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04023K45FKED SR81, R10, RES, 27.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04023K45FKED SR81, R91, R92 R85, 258k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA R81, R82 R85, R85, 40.2k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW04022K4FKED SR81, R85, R85, 40.2k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA R81, R82 R85, R85, R81, R81, R81, R81, R81, R81, R81, R81		RES, 100k ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW0603100KJNEA	5
R63, R72, RES, 2.55k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06032K55FKEA 4 R81, R101 R66, R75 RES, 10.0k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD0710KL 2 R67, R76 RES, 89.8k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD0710KL 2 R85 RES, 60.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040260K4FKED 1 R86 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-6042-B-T5 1 R88, R1411, RES, 30.1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-3012-B-T5 3 R90, R10, RES, 58, 38.3k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040238K3FKED 5 R91, R92 RES, 27.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040227K4FKED 2 R94 RES, 255k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW040227K4FKED 2 R94 RES, 25, 2k ohm, 1%, 0.1W, 0603 Yageo America RT060338RD0740K2L 1 R95 RES, 40.2k ohm, 0.1%, 0.1W, 0603 Yageo America RT060338RD0740K2L 1 R108, R121, S8, 58, 60.4k ohm, 0.1%, 0.1W, 0603 Yageo America RT060338R074					
R81, R101 R66, R75 RES, 10.0k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD0710KL 2 R87, R76 RES, 89.8k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD0719K6L 2 R85 RES, 60.4k ohm, 11%, 0.063W, 0402 Vishay-Dale CRCW040260K4FKED 1 R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-3012-B-T5 1 R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW040238K3FKED 5 R814, R81, R81, R81, R81, R81, R81, R81, R81					
R66, R75 RES., 10.0k ohm., 0.1%, 0.1W, 0603 Yageo America RT0603BRD0710KL 2 R67, R76 RES., 89.8k ohm., 0.1%, 0.1W, 0603 Yageo America RT0603BRD0769K8L 2 R85 RES., 60.4k ohm., 1%, 0.063W, 0402 Vishay-Dale CRCW040260K4FKED 1 R86 RES., 60.4k ohm., 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-6042-B-T5 1 R88, R1414, R143 RES., 130.1k ohm., 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-6042-B-T5 3 R67, R67, R67, R67, R67, R67, R67, R67,		RES, 2.55k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06032K55FKEA	4
R67, R76 RES, 89.8k ohm, 0.1%, 0.10%, 0.63W, 0.402					
R85 RES, 60.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040250K4FKED 1 R86 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-6042-B-T5 1 R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-3012-B-T5 3 R90, R110, RES, 38.3k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040238K3FKED 5 R91, R92 RES, 25k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW040227K4FKED 2 R94 RES, 25k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA 1 R95 RES, 40.2k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA 1 R96 RES, 50.4k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD0740K2L 1 R106 RES, 133k ohm, 1%, 0.1W, 0603 Susumu Co Ltd ERA-3AEB19333V 1 R108 RISZ, RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd ERA-3AEB19333V 1 R108 RISZ, 158k ohm, 1%, 0.1W, 0603 Susumu Co Ltd CRCW060158KFKEA 1 R112 RES, 56.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0601			Yageo America	RT0603BRD0710KL	
R85 RES, 60.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040250K4FKED 1 R86 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-6042-B-T5 1 R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-3012-B-T5 3 R90, R110, RES, 38.3k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040238K3FKED 5 R91, R92 RES, 25k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW040227K4FKED 2 R94 RES, 25k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA 1 R95 RES, 40.2k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA 1 R96 RES, 50.4k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD0740K2L 1 R106 RES, 133k ohm, 1%, 0.1W, 0603 Susumu Co Ltd ERA-3AEB19333V 1 R108 RISZ, RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd ERA-3AEB19333V 1 R108 RISZ, 158k ohm, 1%, 0.1W, 0603 Susumu Co Ltd CRCW060158KFKEA 1 R112 RES, 56.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0601	R67, R76	RES, 89.8k ohm, 0.1%, 0.1W, 0603	Yageo America	RT0603BRD0789K8L	2
R86 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-6042-B-T5 1 R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-3012-B-T5 3 R90, R110, R111, R134, R145 RES, 38.3k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040238K3FKED 5 R91, R92 RES, 258k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0603255KFKEA 1 R94 RES, 258k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA 1 R95 RES, 40.2k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD0740K2L 1 R96 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Panasonic REA-3AEB6042V 1 R106 RES, 338 khm, 1%, 0.1W, 0603 Panasonic REA-3AEB333V 1 R108 RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-303-B-T5 2 R112 RES, 65 c2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW040256K2FKED 1 R112 RES, 65 c2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R114 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603150KFKEA			<u> </u>	CRCW040260K4FKED	
R88, R141, RES, 30.1k ohm, 0.1%, 0.1W, 0603 R143 R90, R110, RES, 38.3k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040238K3FKED 5 R91, R92 RES, 227.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0603256KFKEA CRCW040227K4FKED CRCW0603256KFKEA CRCW0400325KFKEA CRCW040227K4FKED CRCW0603256KFKEA CRCW0400325KFKEA CRCW0400345KFKEA CRCW040034KFKEA CRCW040034KFKEA CRCW040034KFKEA CRCW040034KFKEA	R86			RG1608P-6042-B-T5	1
R90, R110, RES, 38.3k ohm, 1%, 0.063W, 0402					
R90, R110, R111, R111, R145 R91, R92, R145 R91, R92 R94, R92, R94, R94, R94, R94, R94, R94, R95, R95, R94, R95, R95, R95, R94, R94, R95, R95, R95, R95, R95, R95, R95, R95					
R111, R134, R145 R91, R92 RES, 27.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040227K4FKED 2 R94 RES, 255k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA 1 R95 RES, 40.2k ohm, 0.1%, 0.1W, 0603 Vageo America RT0603BRD0740K2L 1 R96 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd ERA-3AEB6042V 1 R106 RES, 133k ohm, 1%, 0.1W, 0603 Panasonic ERA-3AEB6042V 1 R108, R132 RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-303-B-T5 2 R112 RES, 56.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060256K2FKED 1 R113 RES, 158k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R114 RES, 42.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R115 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R116 RES, 37.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603150KFKEA 1 R117 RES, 42.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R121 RES, 55.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R122 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R124 RES, 62k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R125 RES, 27.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R126 RES, 240k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K5FKEA 1 R127 RES, 25.3Ck ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R128 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R129 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.0W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R131 RES, 10.0k ohm, 1%, 0.0SW, 0402 Vishay-Dale CRCW060371K5FKED 2 R136, R151 RES, 10.0k ohm, 1%, 0.0G3W, 0402 Vishay-Dale CRCW040213KFKED 1 R138, R146 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 1 R149 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW04		RES 38.3k ohm 1% 0.063W 0402	Vishay-Dale	CRCW040238K3EKED	5
R134, R145 R91, R92 RES, 27.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0603255KFKEA 1 R95 RES, 40.2k ohm, 0.1%, 0.1W, 0603 R96 RES, 60.4k ohm, 0.1%, 0.1W, 0603 R160 R97 R160 R17 R106 R17 R106 R185 R17 R106 R185 R185		1120, 00.0K 0HH, 170, 0.000VV, 0402	Violity Build	CROWO-0200ROFRED	
R91, R92 RES, 27.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040227K4FKED 2 R94 RES, 255k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA 1 R95 RES, 40.2k ohm, 0.1%, 0.1W, 0603 Yageo America RT0606338FD0740K2L 1 R96 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd ERA-3AEB6042V 1 R106 RES, 133k ohm, 1%, 0.1W, 0603 Panasonic ERA-3AEB1333V 1 R108, R132 RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1808P-303-B-15 2 R112 RES, 56.2k ohm, 1%, 0.0W, 0603 Vishay-Dale CRCW040256K2FKED 1 R113 RES, 158k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603180KFKEA 1 R114 RES, 42.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603180KFKEA 1 R118 RES, 73.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603180KFKEA 1 R118 RES, 73.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K2FKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K2FKEA	· · · · · · · · · · · · · · · · · · ·				
R94 RES, 255k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603255KFKEA 1 R95 RES, 40.2k ohm, 0.1%, 0.1W, 0603 Yageo America RT060388R00740K2L 1 R96 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd ERA-3AEB6042V 1 R106 RES, 133k ohm, 1%, 0.1W, 0603 Panasonic ERA-3AEB1333V 1 R108, R132 RES, 56.2k ohm, 1%, 0.1W, 0603 Susumu Co Ltd RG1608P-303-B-T5 2 R112 RES, 56.2k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040256K2FKED 1 R113 RES, 158k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R114 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R115 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060378KFKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Yageo America RCC06037R-07240KL 1 R122 RES, 7.1.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 <td></td> <td></td> <td>Vichov Dolo</td> <td>CDCW040227K4EKED</td> <td>-</td>			Vichov Dolo	CDCW040227K4EKED	-
R95 RES, 40.2k ohm, 0.1%, 0.1W, 0603 Yageo America RT0603BRD0740K2L 1 R96 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd ERA-3ABE8042V 1 R106 RES, 133k ohm, 1%, 0.1W, 0603 Panasonic ERA-3ABE1333V 1 R108, R132 RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-303-B-T5 2 R112 RES, 56.2k ohm, 1%, 0.083W, 0402 Vishay-Dale CRCW040256K2FKED 1 R113 RES, 158k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R114 RES, 56.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603150KFKEA 1 R114 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603150KFKEA 1 R115 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R122 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K4FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K4FKEA 1			·		
R96 RES, 60.4k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd ERA-3AEB6042V 1 R106 RES, 133k ohm, 1%, 0.1W, 0603 Panasonic ERA-3AEB1333V 1 R108, R132 RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-303-B-T5 2 R112 RES, 56.2k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040256K2FKED 1 R113 RES, 158k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R114 RES, 42.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R114 RES, 42.0k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060375KFKEA 1 R115 RES, 158k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R118 RES, 73.2k ohm, 1%, 0.1W, 0603 Yageo America RC0603FR-07240KL 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R121 RES, 158k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371KFKEA 1					
R106 RES, 133k ohm, 1%, 0.1W, 0603 Panasonic ERA-3AEB1333V 1 R108, R132 RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-303-B-T5 2 R112 RES, 56.2k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040256K2FKED 1 R113 RES, 158k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R114 RES, 42.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603150KFKEA 1 R115 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603150KFKEA 1 R118 RES, 73.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060376KFKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060376KFKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060376KFKEA 1 R122 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060376KFKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW06037KFKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW06037KFKEA 1 R136 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040213KFKED 2 R147 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402178KFKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217KFKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217KFKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210KOFKED 2 R147 RES, 10 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210KFKED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KOFKED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KOFKED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KOFKED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KOJNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KOJNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KOJNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402		• • • • • • • • • • • • • • • • • • • •			
R108, R132 RES, 30.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-303-B-T5 2 R112 RES, 56.2k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040256K2FKED 1 R113 RES, 158k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R114 RES, 42.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060342K2FKEA 1 R115 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603150KFKEA 1 R118 RES, 73.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060378K2FKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060378K2FKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R130 RES, 37.4k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K4FKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Vishay-Dale CRCW060337K4FKEA 1 R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402133KFKED 2 R136, R151 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402133KFKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R150 RES, 100 hm, 5%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R150 RES, 100 hm, 5%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R150 RES, 100 hm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R150 RES, 100 hm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R150 RES, 100 hm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R150 RES, 100 hm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R150 RES, 100 hm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R150 RES, 100 hm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R150 RES, 100 hm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R150 RES, 499 hm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R160 RES, 4.990 hm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R160 RES, 1.00 hm, 5%, 0.063W, 0					
R112 RES, 56.2k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040256K2FKED 1 R113 RES, 158k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R114 RES, 42.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060342K2FKEA 1 R115 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603150KFKEA 1 R118 RES, 73.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Yageo America RC0603FR-07240KL 1 R122 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K5FKEA 1 R125 RES, 37.4k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K4FKEA 1 R126 RES, 37.4k ohm, 1%, 0.063W Vishay-Dale CRCW06037K4FKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-203-B-T5 1 R135 RH46 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210KFKED					· ·
R113 RES, 158k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603158KFKEA 1 R114 RES, 42.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060342K2FKEA 1 R115 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603150KFKEA 1 R118 RES, 73.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Yageo America RC0603FR-07240KL 1 R122 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603162KFKEA 1 R125 RES, 37.4k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603162KFKEA 1 R130 RES, 20.0k ohm, 1%, 0.1W, 0603 Susumu Co Ltd RG1608P-203-B-T5 1 R135 RES, 37.4k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402133KFKEA 1 R135 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 1 <td></td> <td></td> <td></td> <td></td> <td>2</td>					2
R114 RES, 42.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060342K2FKEA 1 R115 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603150KFKEA 1 R118 RES, 73.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373KFKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Yageo America RC0603FR-07240KL 1 R122 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R125 RES, 37.4k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060337K4FKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.0603 Susumu Co Ltd RG1608P-203-B-T5 1 R135, R146 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040213KFKED 2 R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 1 R148 RES, 100 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KFKED					1
R115 RES, 150k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603150KFKEA 1 R118 RES, 73.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Yageo America RC0603FR-07240KL 1 R122 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603162KFKEA 1 R125 RES, 37.4k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K4FKEA 1 R130 RES, 20.0k ohm, 0.1W, 0603 Susumu Co Ltd RG1608P-203-B-T5 1 R135, R146 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040213XFKED 2 R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 1 R148 RES, 130k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KJRDD			Vishay-Dale	CRCW0603158KFKEA	1
R118 RES, 73.2k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060373K2FKEA 1 R120 RES, 240k ohm, 1%, 0.1W, 0603 Yageo America RC0603FR-07240KL 1 R122 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K4FKEA 1 R125 RES, 37.4k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K4FKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-203-B-T5 1 R135, R146 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040213KFKED 2 R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210NFKED 1 R149 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210NFNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED			Vishay-Dale	CRCW060342K2FKEA	1
R120 RES, 240k ohm, 1%, 0.1W, 0603 Yageo America RC0603FR-07240KL 1 R122 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603162KFKEA 1 R125 RES, 37.4k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K4FKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-203-B-T5 1 R135, R146 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402133KFKED 2 R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R149 RES, 10 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210R0JNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW0402100KJNED 1 R154 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED <td>R115</td> <td>RES, 150k ohm, 1%, 0.1W, 0603</td> <td>Vishay-Dale</td> <td>CRCW0603150KFKEA</td> <td>1</td>	R115	RES, 150k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603150KFKEA	1
R120 RES, 240k ohm, 1%, 0.1W, 0603 Yageo America RC0603FR-07240KL 1 R122 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603162KFKEA 1 R125 RES, 37.4k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW06037K4FKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-203-B-T5 1 R135, R146 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402133KFKED 2 R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R150 RES, 10 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210R0JNED 1 R151 RES, 10 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED	R118	RES, 73.2k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060373K2FKEA	1
R122 RES, 71.5k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060371K5FKEA 1 R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603162KFKEA 1 R125 RES, 37.4k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060337K4FKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-203-B-T5 1 R135, R146 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040213KFKED 2 R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R149 RES, 10 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210RJNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED 1 R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040228K66FKED <td></td> <td>RES, 240k ohm, 1%, 0.1W, 0603</td> <td>·</td> <td>RC0603FR-07240KL</td> <td>1</td>		RES, 240k ohm, 1%, 0.1W, 0603	·	RC0603FR-07240KL	1
R124 RES, 162k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW0603162KFKEA 1 R125 RES, 37.4k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060337K4FKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-203-B-T5 1 R135, R146 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402133KFKED 2 R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R149 RES, 10 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210R0JNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED 1 R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04028K66FKED 1 R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED <td></td> <td></td> <td></td> <td></td> <td>1</td>					1
R125 RES, 37.4k ohm, 1%, 0.1W, 0603 Vishay-Dale CRCW060337K4FKEA 1 R130 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-203-B-T5 1 R135, R146 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040213XFKED 2 R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R149 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210RDJNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED 1 R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04028K66FKED 1 R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210RFKED 1 R160 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210RFKED <td></td> <td></td> <td></td> <td></td> <td>1</td>					1
R130 RES, 20.0k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-203-B-T5 1 R135, R146 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402133KFKED 2 R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R149 RES, 10 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210R0JNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW0402100KJNED 1 R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED 1 R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040228K66FKED 1 R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402499RFKED 1 R160, R162 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402100RFKED 2 R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608			ž		
R135, R146 RES, 133k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402133KFKED 2 R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R149 RES, 10 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210R0JNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED 1 R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04028K66FKED 1 R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402499RFKED 1 R160, R162 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402100RFKED 2 R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-4991-B-T5 1 R170 RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K			·		
R136, R151 RES, 10.0k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040210K0FKED 2 R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R149 RES, 10 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210R0JNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210KJNED 1 R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED 1 R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04028K66FKED 1 R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402499RFKED 1 R160, R162 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402100RFKED 2 R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-4991-B-T5 1 R170, RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3					
R147 RES, 17.8k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040217K8FKED 1 R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R149 RES, 10 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210R0JNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW0402100KJNED 1 R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED 1 R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04028K66FKED 1 R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402499RFKED 1 R160, R162 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402100RFKED 2 R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-4991-B-T5 1 R169 RES, 1.0 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 1 R170 RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3			j		
R148 RES, 130k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402130KFKED 1 R149 RES, 10 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210R0JNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW0402100KJNED 1 R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED 1 R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04028K66FKED 1 R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402499RFKED 1 R160, R162 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402100RFKED 2 R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-4991-B-T5 1 R169 RES, 1.0 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW04021R00JNED 1 R170, RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3			·		
R149 RES, 10 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210R0JNED 1 R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW0402100KJNED 1 R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED 1 R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04028K66FKED 1 R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402499RFKED 1 R160, R162 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402100RFKED 2 R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-4991-B-T5 1 R169 RES, 1.0 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW04021R00JNED 1 R170, RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3 R171, R172 R171, R172 R184 CRCW040210K0JNED 3			·		-
R150 RES, 100k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW0402100KJNED 1 R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED 1 R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04028K66FKED 1 R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402499RFKED 1 R160, R162 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402100RFKED 2 R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-4991-B-T5 1 R169 RES, 1.0 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW04021R00JNED 1 R170, RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3 R171, R172 R171, R172 R172 R173 R174 R174 R174 R175 R174			·		
R152 RES, 23.7k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW040223K7FKED 1 R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04028K66FKED 1 R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402499RFKED 1 R160, R162 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402100RFKED 2 R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-4991-B-T5 1 R169 RES, 1.0 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW04021R00JNED 1 R170, R172 RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3			·		
R154 RES, 8.66k ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW04028K66FKED 1 R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402499RFKED 1 R160, R162 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402100RFKED 2 R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-4991-B-T5 1 R169 RES, 1.0 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW04021R00JNED 1 R170, R172 RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3			·		
R159 RES, 499 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402499RFKED 1 R160, R162 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402100RFKED 2 R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-4991-B-T5 1 R169 RES, 1.0 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW04021R00JNED 1 R170, R170 RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3			·		
R160, R162 RES, 100 ohm, 1%, 0.063W, 0402 Vishay-Dale CRCW0402100RFKED 2 R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-4991-B-T5 1 R169 RES, 1.0 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW04021R00JNED 1 R170, R170 RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3 R171, R172 R171, R172 R172 R172 R173 R174 R1			·		
R161 RES, 4.99k ohm, 0.1%, 0.1W, 0603 Susumu Co Ltd RG1608P-4991-B-T5 1 R169 RES, 1.0 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW04021R00JNED 1 R170, R171 RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3			•		
R169 RES, 1.0 ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW04021R00JNED 1 R170, RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3 R171, R172 R172, R172 R1			·		
R170, RES, 10k ohm, 5%, 0.063W, 0402 Vishay-Dale CRCW040210K0JNED 3					
R171, R172			Vishay-Dale	CRCW04021R00JNED	
R171, R172	R170,	RES, 10k ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW040210K0JNED	3
		RES, 3.0 ohm, 5%, 0.25W, 1206	Vishay-Dale	CRCW12063R00JNEA	1

Designator	Description The Description	Manufacturer	PartNumber	Quantity
	Test Point, Miniature, White, TH	Keystone	5002	6
TP8, TP15,				
TP16, TP18				
	Test Point, Miniature, Red, TH	Keystone	5000	4
TP19, TP20				
	Test Point, Miniature, Black, TH	Keystone	5001	5
TP12,				
TP13, TP14				
	Test Point, Multipurpose, Red, TH	Keystone	5010	17
TP23,				
TP24,				
TP27,				
TP28,				
TP31,				
TP32,				
TP36,				
TP39,				
TP40,				
TP44,				
TP47,				
TP51,				
TP55,				
TP59, TP60				
	Test Point, Multipurpose, Black, TH	Keystone	5011	12
TP25,	, , , , , , , , , , , , , , , , , , , ,	.,		
TP29,				
TP33,				
TP37,				
TP41,				
TP45,				
TP48,				
TP52,				
TP56, TP61				
	Test Point, Miniature, SMT	Keystone	5015	16
TP21,	rest i dirit, iviii liature, divi i	Reystone	3013	10
TP22,				
TP26,				
TP30,				
TP30,				
TP34,				
TP35,				
TP42,				
TP43,				
TP49,				
TP50,				
TP53,				
TP54,				
TP57, TP58	Toot Doint Multipurpose Orange TU	Kovotono	5012	1
TP46	Test Point, Multipurpose, Orange, TH	Keystone	5013	1
	IC, Digital PWM System Controller	Toward Instruments	UCD90120ARGC	1
	Dual output, 2 phase, stackable PMBUS synchronous	Texas Instruments	TPS40428RHA	1
	buck driverless controller, RHA0040B	Tarrag laster en e	TD054007D\/E	4
	22-V Input, 12-A Integrated FET Converter With Ultra-	Texas Instruments	TPS51367RVE	4
	Low Quiescent, RVE0028A		 	
	Micro-Power (50mA), Zerø-Drift, Rail-to-Rail Out	Texas Instruments	INA333AIDGK	4
	Instrumentation Amplifier			
	TPS544B20 18V, 20A PMBUS SYNCHRONOUS BUCK	I exas Instruments	TPS544B20RVF	4
	CONVERTERS, RVF0040A			
	High Performance, 12-A Single Synchronous Step-	Texas Instruments	TPS53515RVE	1
	Down Converter, RVE0028A			

Designator	Description	Manufacturer	PartNumber	Quantity
U16	3.0-V TO 20-V PMBus SYNCHRONOUS BUCK	Texas Instruments	TPS40400RHL	1
	CONTROLLER, RHL0024A			
U17	MOSFET, N/P-CH, 25V, 20A, 3.4x1.4x3.4mm	Texas Instruments	CSD86330Q3D	1

IMPORTANT NOTICE FOR TI REFERENCE DESIGNS

Texas Instruments Incorporated ("TI") reference designs are solely intended to assist designers ("Buyers") who are developing systems that incorporate TI semiconductor products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products.

TI reference designs have been created using standard laboratory conditions and engineering practices. TI has not conducted any testing other than that specifically described in the published documentation for a particular reference design. TI may make corrections, enhancements, improvements and other changes to its reference designs.

Buyers are authorized to use TI reference designs with the TI component(s) identified in each particular reference design and to modify the reference design in the development of their end products. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER TI INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN, including but not limited to any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI components or services are used. Information published by TI regarding third-party products or services does not constitute a license to use such products or services, or a warranty or endorsement thereof. Use of such information may require a license from a third party, or a license from TI under the patents or other intellectual property of TI.

TI REFERENCE DESIGNS ARE PROVIDED "AS IS". TI MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE REFERENCE DESIGNS OR USE OF THE REFERENCE DESIGNS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. TI DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO TI REFERENCE DESIGNS OR USE THEREOF. TI SHALL NOT BE LIABLE FOR AND SHALL NOT DEFEND OR INDEMNIFY BUYERS AGAINST ANY THIRD PARTY INFRINGEMENT CLAIM THAT RELATES TO OR IS BASED ON A COMBINATION OF COMPONENTS PROVIDED IN A TI REFERENCE DESIGN. IN NO EVENT SHALL TI BE LIABLE FOR ANY ACTUAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES, HOWEVER CAUSED, ON ANY THEORY OF LIABILITY AND WHETHER OR NOT TI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, ARISING IN ANY WAY OUT OF TI REFERENCE DESIGNS OR BUYER'S USE OF TI REFERENCE DESIGNS.

TI reserves the right to make corrections, enhancements, improvements and other changes to its semiconductor products and services per JESD46, latest issue, and to discontinue any product or service per JESD48, latest issue. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All semiconductor products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its components to the specifications applicable at the time of sale, in accordance with the warranty in TI's terms and conditions of sale of semiconductor products. Testing and other quality control techniques for TI components are used to the extent TI deems necessary to support this warranty. Except where mandated by applicable law, testing of all parameters of each component is not necessarily performed.

TI assumes no liability for applications assistance or the design of Buyers' products. Buyers are responsible for their products and applications using TI components. To minimize the risks associated with Buyers' products and applications, Buyers should provide adequate design and operating safeguards.

Reproduction of significant portions of TI information in TI data books, data sheets or reference designs is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Buyer acknowledges and agrees that it is solely responsible for compliance with all legal, regulatory and safety-related requirements concerning its products, and any use of TI components in its applications, notwithstanding any applications-related information or support that may be provided by TI. Buyer represents and agrees that it has all the necessary expertise to create and implement safeguards that anticipate dangerous failures, monitor failures and their consequences, lessen the likelihood of dangerous failures and take appropriate remedial actions. Buyer will fully indemnify TI and its representatives against any damages arising out of the use of any TI components in Buyer's safety-critical applications.

In some cases, TI components may be promoted specifically to facilitate safety-related applications. With such components, TI's goal is to help enable customers to design and create their own end-product solutions that meet applicable functional safety standards and requirements. Nonetheless, such components are subject to these terms.

No TI components are authorized for use in FDA Class III (or similar life-critical medical equipment) unless authorized officers of the parties have executed an agreement specifically governing such use.

Only those TI components that TI has specifically designated as military grade or "enhanced plastic" are designed and intended for use in military/aerospace applications or environments. Buyer acknowledges and agrees that any military or aerospace use of TI components that have *not* been so designated is solely at Buyer's risk, and Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI has specifically designated certain components as meeting ISO/TS16949 requirements, mainly for automotive use. In any case of use of non-designated products, TI will not be responsible for any failure to meet ISO/TS16949.